

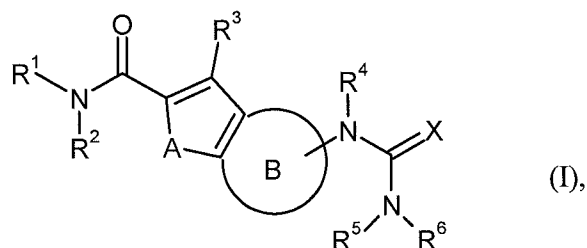
AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

A. Claims

1. (Currently Amended) A compound of the formula



in which

R¹ is 1-azabicyclo[2.2.2]oct-3-yl,

R² is hydrogen or ~~C₁-C₆-alkyl~~,

R^3 is hydrogen, halogen, amino, hydroxy or C_1 - C_6 -alkyl,

R⁴ is hydrogen, C₁-C₆-alkyl which is optionally substituted by a radical selected from the group of hydroxy, halogen, cyano, C₁-C₆-alkoxy, trifluoromethyl, trifluoromethoxy,

R^5 is hydrogen or C_1 - C_6 -alkyl, or

~~R^4 and R^5 together with the nitrogen atom to which they are bonded are a 5- to 6-membered heterocycle which is optionally substituted by up to 2 substituents independently of one another selected from the group of C_1 - C_6 -alkyl, C_1 - C_4 -acyl, oxo, thioxo,~~

R^6 is (i) hydrogen, (ii) C_1 - C_6 -alkyl, (iii) C_3 - C_8 -cycloalkyl, (iv) C_6 - C_{10} -aryl, (v) 5- to 10-membered heteroaryl, (vi) C_6 - C_{10} -arylcarbonyl, where (ii) is optionally substituted by phenyl, C_1 - C_6 -alkoxycarbonyl or C_1 - C_6 -alkoxy, and (iv), (v) and (vi) are optionally substituted by up to 3 radicals selected independently of one another from the group of C_1 - C_6 -alkyl, C_1 - C_6 -hydroxyalkyl, 3- to 8-membered heterocyclyl, C_6 - C_{10} -aryl, 5- to 10-membered heteroaryl, hydroxy, halogen, cyano, C_1 - C_6 -alkoxy, C_1 - C_6 -acyl, trifluoromethyl, trifluoromethoxy, nitro, amino, C_1 - C_6 -alkylamino, or C_1 - C_6 -acylamino, or

~~R^5 and R^6 together with the nitrogen atom to which they are bonded are a 3- to 10-membered heterocycle which is optionally substituted by C_1 - C_6 -alkyl or C_1 - C_6 -hydroxyalkyl,~~

A is oxygen, nitrogen or sulfur,

X is oxygen or sulfur,

the ring B is benzo or pyrido, each of which are optionally substituted by radicals from the series halogen, cyano, trifluoromethyl, trifluoromethoxy, nitro, amino, C_1 - C_6 -alkyl and C_1 - C_6 -alkoxy,

~~and the solvates, salts or solvates of the salts of this compound.~~

or a solvate, a salt or a solvate of a salt thereof.

2. (Currently amended) A compound as claimed in claim 1, of the formula (I) in which

R¹ is 1-azabicyclo[2.2.2]oct-3-yl,

R² is hydrogen or C₁-C₆-alkyl,

R³ is hydrogen, halogen, amino, hydroxy or C₁-C₆-alkyl,

R⁴ is hydrogen, C₁-C₆-alkyl which is optionally substituted by a radical selected from the group of hydroxy, halogen, cyano, C₁-C₆-alkoxy, trifluoromethyl, trifluoromethoxy,

R⁵ is hydrogen or C₁-C₆-alkyl, or

~~R⁴ and R⁵ together with the nitrogen atom to which they are bonded are a 5- to 6-membered heterocycle which is optionally substituted by up to 2 substituents independently of one another selected from the group of C₁-C₆-alkyl, C₁-C₄-acyl, oxo, thioxo,~~

R^6 is (i) hydrogen, (ii) C_1 - C_6 -alkyl, (iii) C_3 - C_8 -cycloalkyl, (iv) C_6 - C_{10} -aryl, (v) 5- to 10-membered heteroaryl, where (ii) is optionally substituted by phenyl, or C_1 - C_6 -alkoxy, and (iv) and (v) are optionally substituted by up to 3 radicals selected independently of one another from the group of C_1 - C_6 -alkyl, C_1 - C_6 -hydroxyalkyl, 3- to 8-membered heterocyclyl, C_6 - C_{10} -aryl, 5- to 10-membered heteroaryl, hydroxy, halogen, cyano, C_1 - C_6 -alkoxy, C_1 - C_6 -acyl, trifluoromethyl, trifluoromethoxy, nitro, amino, C_1 - C_6 -alkylamino, or C_1 - C_6 -acylamino, ~~or~~

~~R^5 and R^6 together with the nitrogen atom to which they are bonded are a 3- to 8-membered heterocycle which is optionally substituted by C_1 - C_6 -alkyl or C_1 - C_6 -hydroxyalkyl,~~

A is ~~oxygen, nitrogen or~~ sulfur, and

X is ~~oxygen or~~ sulfur, and

the ring B is benzo ~~or~~ pyrido, ~~each of which are optionally substituted by radicals from the series halogen, cyano, trifluoromethyl, trifluoromethoxy, nitro, amino, C_1 - C_6 -alkyl and C_1 - C_6 -alkoxy,~~

~~and the solvates, salts or solvates of the salts of this compound.~~

or a solvate, a salt or a solvate of a salt thereof.

3. (Currently amended) A compound as claimed in claim 1, of the formula (I) in which

R¹ is 1-aza-bicyclo[2.2.2]oct-3-yl,

R² is hydrogen or C₁-C₄-alkyl,

R³ is hydrogen, halogen, amino, hydroxy or C₁-C₄-alkyl,

R⁴ is hydrogen, C₁-C₄-alkyl which is optionally substituted by a radical selected from the group of hydroxy, halogen, cyano, C₁-C₃-alkoxy, trifluoromethyl, trifluoromethoxy,

R⁵ is hydrogen or C₁-C₄-alkyl, or

~~R⁴ and R⁵ together with the nitrogen atom to which they are bonded are a 5- to 6-membered heterocycle which is optionally substituted by up to 2 substituents independently of one another selected from the group of C₁-C₆-alkyl, C₁-C₄-acyl, oxo, thioxo,~~

R⁶ is (i) hydrogen, (ii) C₁-C₄-alkyl, (iii) C₅-C₆-cycloalkyl, (iv) phenyl, (v) 5- to 6-membered heteroaryl, (vi) C₆-C₁₀-arylcarbonyl, where (ii) is optionally substituted by phenyl, C₁-C₄-alkoxycarbonyl or C₁-C₃-alkoxy, and (iv), (v) and (vi) are optionally substituted by up to 3 radicals selected independently of one another from the group of C₁-C₄-alkyl, C₁-C₄-hydroxyalkyl, 3- to 8-membered heterocyclyl, C₆-C₁₀-aryl, 5- to 10-membered heteroaryl, hydroxy, fluorine, chlorine, cyano, C₁-C₃-alkoxy, C₁-C₃-acyl, trifluoromethyl, trifluoromethoxy, nitro, amino, C₁-C₃-alkylamino, or C₁-C₃-acylamino, ~~or~~

~~R⁵ and R⁶ together with the nitrogen atom to which they are bonded are a 3- to 10-membered heterocycle which is optionally substituted by C₁-C₃-alkyl or C₁-C₃-hydroxyalkyl,~~

A is ~~oxygen~~ or sulfur,

X is oxygen,

~~the ring B is benzo or pyrido, each of which are optionally substituted by radicals from the series chlorine, fluorine, cyano, trifluoromethyl, trifluoromethoxy, amino, C₁-C₄-alkyl and C₁-C₄-alkoxy,~~

~~and the solvates, salts or solvates of the salts of this compound.~~

or a solvate, a salt or a solvate of a salt thereof.

4. (Currently amended) A compound as claimed claim 1, of the formula (I) in which

R¹ is 1-azabicyclo[2.2.2]oct-3-yl,

R² is hydrogen or C₁-C₄-alkyl,

R³ is hydrogen, halogen, amino, hydroxy or C₁-C₄-alkyl,

~~R⁴ is hydrogen or C₁-C₄-alkyl which is optionally substituted by a radical selected from the group of hydroxy, C₁-C₃-alkoxy, trifluoromethyl, trifluoromethoxy,~~

~~R⁵ is hydrogen or C₁-C₄-alkyl, or~~

~~R⁴ and R⁵ together with the nitrogen atom to which they are bonded are a 5- to 6-membered heterocycle which is optionally substituted by up to 2 substituents independently of one another selected from the group of C₁-C₆-alkyl, C₁-C₄-acyl, oxo, thioxo,~~

R⁶ is (i) hydrogen, (ii) C₁-C₄-alkyl, (iii) C₅-C₆-cycloalkyl, (iv) phenyl, (v) 5- to 6-membered heteroaryl, where (ii) is optionally substituted by phenyl, and (iv) and (v) are optionally substituted by up to 3 radicals selected independently of one another from the group of C₁-C₄-alkyl, C₁-C₄-hydroxyalkyl, hydroxy, chlorine, fluorine, cyano, C₁-C₃-alkoxy, C₁-C₆-acyl, trifluoromethyl, trifluoromethoxy, amino, C₁-C₃-alkylamino, or C₁-C₃-acylamino, or

~~R⁵ and R⁶ together with the nitrogen atom to which they are bonded are a 5- to 6-membered heterocycle which is optionally substituted by C₁-C₃-alkyl or C₁-C₃-hydroxyalkyl,~~

A is ~~oxygen, nitrogen or sulfur,~~

X is oxygen and

~~the ring B is benzo or pyrido, each of which are optionally substituted by radicals from the series chlorine, fluorine, cyano, trifluoromethyl, trifluoromethoxy, amino, C₁-C₄-alkyl and C₁-C₄-alkoxy,~~

~~and the solvates, salts or solvates of the salts of this compound.~~

or a solvate, a salt or a solvate of a salt thereof.

5. (Currently amended) A compound as claimed in claim 1, of the formula (I) in which

R¹ is 1-azabicyclo[2.2.2]oct-3-yl,

R² to R⁴ are hydrogen,

R⁵ is hydrogen or C₁-C₄-alkyl, or

~~R⁴ and R⁵ together with the nitrogen atom to which they are bonded are a 5- to 6-membered heterocycle which is optionally substituted by up to 2 substituents independently of one another selected from the group of C₁-C₄-alkyl, C₁-C₄-acyl, oxo, thioxo,~~

R⁶ is (i) hydrogen, (ii) C₁-C₄-alkyl, (iii) C₅-C₆-cycloalkyl, (iv) phenyl, (v) pyridyl, (vi) C₆-C₁₀-arylcarbonyl, where (ii) is optionally substituted by phenyl, C₁-C₄-alkoxycarbonyl or C₁-C₃-alkoxy, and (iv), (v) and (vi) are optionally substituted by up to 3 radicals selected independently of one another from the group of C₁-C₄-alkyl, C₁-C₄-hydroxyalkyl, 3- to 8-membered heterocyclyl, C₆-C₁₀-aryl, 5- to 10-membered heteroaryl, hydroxy, fluorine, chlorine, cyano, C₁-C₃-alkoxy, C₁-

C₃-acyl, trifluoromethyl, trifluoromethoxy, nitro, amino, C₁-C₃-alkylamino, or
C₁-C₃-acylamino, or

~~R⁵ and R⁶ together with the nitrogen atom to which they are bonded are a 3 to 10-~~
~~membered heterocycle which is optionally substituted by C₁-C₃-alkyl or C₁-C₃-~~
~~hydroxyalkyl,~~

A is ~~oxygen or~~ sulfur,

X is oxygen,

the ring B is benzo,

~~and the solvates, salts or solvates of the salts of this compound.~~

or a solvate, a salt or a solvate of a salt thereof.

6. (Currently amended) A compound as claimed in claim 1, of the formula (I) in which

R¹ is 1-azabicyclo[2.2.2]oct-3-yl,

R² is hydrogen,

R³ is hydrogen, ~~chlorine, fluorine, amino or C₁-C₃-alkyl,~~

R^4 is hydrogen, methyl or ethyl, where methyl and ethyl are optionally substituted by a radical selected from the group of hydroxy, methoxy, ethoxy, trifluoromethyl, trifluoromethoxy, or

R^4 and R^5 together with the nitrogen atom to which they are bonded are a 5 to 6-membered heterocycle which is optionally substituted by up to 2 substituents independently of one another selected from the group of C_1 - C_3 -alkyl, C_1 - C_4 -acyl, oxo, thioxo,

R^5 is hydrogen or C_1 - C_3 -alkyl,

R^6 is (i) hydrogen, (ii) C_1 - C_4 -alkyl, (iii) cyclopentyl, cyclohexyl, (iv) phenyl, (v) benzyl, (vi) phenethyl, where (iv) to (vi) are optionally substituted by up to 3 radicals selected independently of one another from the group of hydroxy, chlorine, fluorine, cyano, methoxy, ethoxy, C_1 - C_4 -acyl, trifluoromethyl, trifluoromethoxy, amino, C_1 - C_3 -alkylamino,

A is oxygen or sulfur,

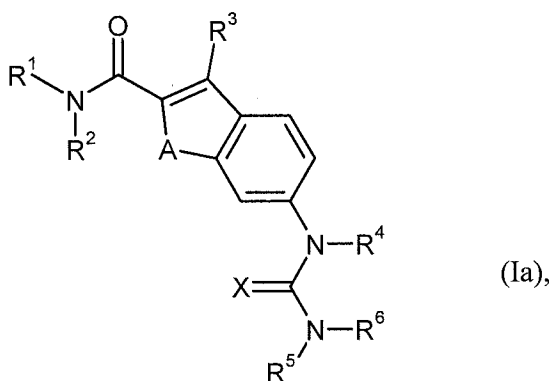
X is oxygen and

the ring B is benzo which is optionally substituted by radicals from the series chlorine, fluorine, cyano, trifluoromethyl, trifluoromethoxy, C_1 - C_4 -alkyl, methoxy and ethoxy,

~~and the solvates, salts or solvates of the salts of this compound.~~

or a solvate, a salt or a solvate of a salt thereof.

7. (Currently amended) A compound of the formula



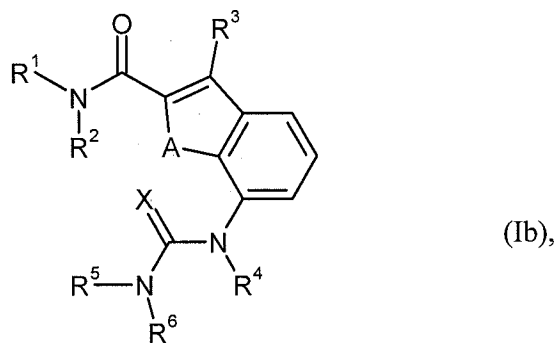
in which

R^1 to R^6 , A and X have the meanings indicated in claim 1,

~~and the solvates, salts or solvates of the salts of this compound.~~

or a solvate, a salt or a solvate of a salt thereof.

8. (Currently amended) A compound of the formula



in which

R^1 to R^6 , A and X have the meanings indicated in claim 1,

~~and the solvates, salts or solvates of the salts of this compound.~~

or a solvate, a salt or a solvate of a salt thereof.

9. (Canceled)

10. (Canceled) .

11. (Canceled).

12. (Canceled)

13. (Withdrawn, Previously presented) A medicament comprising at least one compound as claimed in claim 1 and at least one pharmaceutically acceptable, essentially nontoxic carrier or excipient.

14. (Withdrawn, Previously presented) A method for improving perception, concentration, learning and/or memory comprising administering to a human or animal an effective amount of a compound of claim 1.
15. (Withdrawn, Previously presented) A method for the treatment and/or prophylaxis of impairments of perception, concentration, learning and/or memory comprising administering to a human or animal an effective amount of a compound of claim 1.
16. (Withdrawn, Previously presented) A method for the treatment and/or prophylaxis of impairments of perception, concentration, learning and/or memory comprising administering to a human or animal an effective amount of a medicament of claim 13.
17. (Canceled)